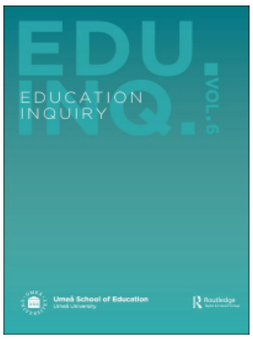

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Cascading effect of upper secondary education policy reform: the experiences and perspectives of university teachers

María Jónasdóttir, Guðrún Ragnarsdóttir and Elsa Eiríksdóttir

School of Education, The University of Iceland, Reykjavik, Iceland

ABSTRACT

In 2014 the Icelandic government implemented a reform that reduced the time of all academic programs of upper secondary education from an average of four years in duration to three, aiming to increase efficiency in the education system. Drawing on critical policy analysis, this study explores wider consequences of the reform's enactment for higher education, with reference to the strong connection between the two school levels. Teachers at the University of Iceland were interviewed about perceived changes, if any, in students' preparation for university studies in the wake of the reform and whether any measures were needed to adapt to such changes. The findings highlight the importance of policy makers considering the interconnectedness of different school levels and the wide-reaching effects of education reforms. They indicate that the policy reform has had consequences in higher education that vary between different academic subjects and disciplines and that there is considerable tension within the University in how to adapt to them. The findings call for further exploration into the content of the academic programs in upper secondary education which may provide valuable information on the interplay between policies that aim for decentralised curriculum-making and efficiency in education systems.

KEYWORDS

Upper secondary education; higher education; education policy reform; critical policy analysis; subject hierarchy

1. Introduction

Education systems are made up of a large number of different policies presented in legislation, regulations, and curricula (Magnússon, Göransson, & Lindqvist, 2019). The Icelandic education system shares some traits with what has been referred to as the Nordic model in education, emphasising education as a crucial part of the welfare system (Antikainen, 2010; Lundahl, 2016; Telhaug, Mediås, & Aasen, 2006; Tröhler, Hörmann, Tveit, & Bostad, 2022). In broad terms, the Icelandic education system can be described as being inclusive, open, and egalitarian, based on the core notion that every student should have an equal right to a comprehensive education (Jónasson, & Óskarsdóttir, 2016). The national curriculum guide for Icelandic upper secondary education emphasises a broad and balanced curriculum. Education authorities are required by law to provide students that have reached the age of 16 upper

CONTACT María Jónasdóttir mojo@hi.is School of Education, The University of Iceland, Reykjavik, Iceland

secondary school placements and studies that suit their needs (Ministry of Education, Science & Culture, 2012; Upper Secondary Education Act, No. 92/2008). Students have wide access and opportunity to attend higher education in Iceland (Isopahkala-Bouret et al., 2018; Jónasson, 2004a, 2004b), as the main entrance requirement is graduation from a matriculation examination program (hereafter academic programs) in upper secondary education and entrance exams are the exception to the rule (Higher Education Act, No. 63/2006; Ragnarsdóttir, Jónasson, 2020; University of Iceland, n.d.a).

The paper focuses on the consequences of a policy reform implemented in 2014, reducing the length of all academic programs in upper secondary education, from four years on average to three (Ministry of Education, Science & Culture, 2014a, 2014b). A discernible part of the reform are international policy trends emphasising efficiency in education (Magnúsdóttir & Jónasson, 2022). Its political rhetoric was to reduce drop-out rates and increase the number of students completing upper secondary education on time (Ministry of Education, Science & Culture, 2014b). The reform was enacted within a policy environment of decentralised curriculum-making (Ministry of Education, Science & Culture, 2012; Upper Secondary Education Act No. 92/2008) and as a result carried out differently in individual upper secondary schools, as the responsibility of designing study programs lies with the schools themselves. This process was not monitored specifically by education authorities and has not been researched much. Therefore, not much is known about the consequences of the reform in terms of its impact on the content of the academic programs and in turn on students' preparation and opportunities for continued academic studies in higher education. In recent decades several education policy reforms have been introduced in the Nordic countries that aim to increase the effective use of public funds and/or to increase the economic production of students (Antikainen, 2010; Beach, 2018; Blossing, Imsen, & Moos, 2013; Gunter, Grimaldi, Hall, & Serpieri, 2016). Studies on the effects of such policies in the Nordic context indicate that they affect the inherent value of different groups of students and schools, that some hold more market value than others (Arnesen, Arnesen, Lahelma, Lundahl, & Öhrn, 2014; Arreman & Dovemark, 2018; Dovemark & Holm, 2017; Dovemark et al., 2018; Lundahl, 2016). Research on their effects on curricular content were not found. However, it could be assumed that when a reform aimed at increasing efficiency in the education system is enacted within an environment of decentralised curriculum-making that some subjects hold different statuses and power within the curriculum, and that some are more likely to have been reduced than others.

Drawing on critical approaches to policy analysis (Ball, 1993, 2015; Ball, Maguire, & Braun, 2011; Diem et al., 2018), in the paper we explore the wider, perhaps unintended, consequences of the policy reform in terms of its implications within the university level. Research on the connection between upper secondary and higher education has mainly focused on higher education's impact on upper secondary education (Bleazby, 2015; Deng, 2012; Lambert, 2014; Ragnarsdóttir, 2018; Ragnarsdóttir, Jónasson, 2020). The aim of this paper however is to explore the connection and reciprocity of upper secondary and higher education, whether upper secondary education reforms have consequences in higher education and if these might in some way vary between academic subjects. The Icelandic case provides a good opportunity for studying the

reciprocity of upper secondary and higher education as the connection between the two school levels is strong, the education system is very small, and the drastic changes brought about by the reform were enacted within a short period of time. In this study, 16 experienced teachers (all tenure-track academic staff) at the University of Iceland were interviewed about perceived changes, if any, in the preparation of students in the wake of the reform and whether any measures were needed, or had been taken, to adapt to those changes. The research questions proposed are:

(1) What are the consequences of the reduced time of academic study programs, as perceived by university teachers, and have any measures been taken to adapt to these consequences?
(2) Are the perceived consequences of the reform, and the measures taken to adapt to them different depending on the academic subject?

2. Context

2.1. *Icelandic higher education, upper secondary education, and academic programs*

The Icelandic higher education system is organised as a unified university sector (Higher Education Act No. 136/1997; Jóhannsdóttir & Jónasson, 2013, 2014), with three private and four public universities (Directorate of Education, n.d. Jónasson, & Óskarsdóttir, 2016), which all receive state funding and have low tuition costs (Government of Iceland, n.d.; Ministry of Education, Science & Culture 2015a). In accordance with the Bologna framework, higher education is organised as three-year undergraduate programs, two-year master's level programs and four-year doctoral programs (Blondal, Jónasson, & Tannhäuser, 2011; Jónasson, & Óskarsdóttir, 2016). Out of the seven Icelandic universities the University of Iceland is the largest, accounting for around two-thirds of all higher education students (Ministry of Education, Science & Culture, 2015a). In the past few decades there has been a substantial increase in the number of students in higher education (Hálfdánarson, Matthíasdóttir, Guðmundsson, & Karlsson, 2011). In general, students have ample access and opportunity to attend higher education in Iceland and it has remained more accessible than higher education in other Nordic countries (Isopahkala-Bouret et al., 2018; Jónasson, 2004a, 2004b). The main entrance requirement is graduation from a program in upper secondary education at the 4th EQF level (ISQF level 3) (Higher Education Act, No. 63/2006). In general, this means matriculation from academic programs (Ragnarsdóttir, Jónasson, 2020). Individual schools in higher education have more specific entrance requirements, stipulating a number of credits in individual academic subjects, mostly in natural sciences, but entrance exams are the exception to the rule (University of Iceland, n.d.a). Students are therefore relatively free to enrol into their program of choice and can easily transfer between programs.

Icelandic upper secondary education is generally intended for ages 16 to 19 (Upper Secondary Education Act, No. 92/2008; Jónasson & Óskarsdóttir, 2016). Over time, Icelandic upper secondary education has taken on a more general educational role as

opposed to mainly being a preparation for higher education for a small group of students with high socio-economic backgrounds (Bergsdóttir & Magnúsdóttir, 2018; Ingimundardóttir, 2004; Jónasson, 1997). Over the last decades the number of students in upper secondary education has increased greatly and today more than 95% of each birth cohort attends upper secondary education (Jóhannesson, & Ásgeir, 2016; Statistics Iceland, 2022). New upper secondary schools have been established and more study programs created to accommodate a larger and more diverse group of students (Eiríksdóttir, Blöndal, & Ragnarsdóttir, 2022; Eiríksdóttir, Ragnarsdóttir & Jónasson, 2018; Jónasson & Óskarsdóttir, 2016; Ragnarsdóttir, 2018). Today most upper secondary schools are comprehensive and offer diverse study programs both academic and vocational (Eiríksdóttir, Blöndal, & Ragnarsdóttir, 2022). Factors that have strongly influenced legislation development for upper secondary education are equal access and opportunity, that students be able to attend upper secondary education irrespective of their sex, physical or academic abilities. All students that have reached the age of 16 have the legal right to be admitted to upper secondary education, irrespective of their physical or academic abilities, and be provided with studies suiting their needs (Ministry of Education, Science &Culture, 2012; Upper Secondary Education Act, No. 92/2008; Parliamentary Document No. 320/2007–2008). Upper secondary schools set their own entrance requirements however and individual schools with strong traditions in academic programs usually do not offer programs for students requiring more academic support (Eiríksdóttir, Blöndal, & Ragnarsdóttir, 2022).

The academic programs in upper secondary education have very strong historical roots and are often considered the backbone of post-compulsory education in Iceland (Jónasson, 1992; Jónasson, 1995; Jónasson,Bjarnadóttir, & Ragnarsdóttir, 2021; Jónasson, Ragnarsdóttir, & Bjarnadóttir, 2021; Ragnarsdóttir, 2018). These programs are by far the most popular in upper secondary education, around two-thirds of students graduate from them (Eiríksdóttir, Jóhannesson 2016; Statistics Iceland, 2022). Until the implementation of the National Curriculum in 2011 (Ministry of Education, Science & Culture, 2012) there were three types of academic programs that traditionally prepared students for higher education: Natural sciences, social sciences, and languages programs. The programs were centrally organised by the MoESC and the difference between individual academic programs was small in terms of both their organisation and content (Ministry of Education, 2004; Ragnarsdóttir & Jónasson, 2020). With the introduction of a policy of decentralised curriculum-making the responsibility of designing study programs moved to the upper secondary schools (Parliament Document, No. 320/2007–2008; Upper Secondary Education Act, No. 92/2008). These changes were influenced by European and OECD education policy of increased school autonomy (Jónasson, Ragnarsdóttir, & Bjarnadóttir, 2021; Ragnarsdóttir, 2018). Individual upper secondary schools were given considerable freedom regarding the depth and scope of their study programs (Ministry of Education, Science & Culture, 2012; Ragnarsdóttir, 2018). With the enactment of the policy of decentralised curriculum-making the number and variability of the academic programs increased drastically, from five to around 150 (Directorate of Education, n.d. Ministry of Education, 2004). This sparked a debate within the University of Iceland on the need for entrance exams for admission to the university (University of Iceland, n.d.b). In

2014, while the decentralised curriculum policy was being enacted, the Icelandic government issued a reform requiring all upper secondary schools to reduce the length of their academic programs, complicating matters even further.

2.2. *The reform of 2014: shorter academic programs in upper secondary education*

The political debate on reducing the time of the academic programs from four years to three can be traced back around 50 years (Ragnarsdóttir, 2018). The idea of reducing the time of the academic programs gained more interest on the political agenda in the 1990's, coinciding with shifts in public administration policy, generally referred to as new public management (NPM). In broad terms NPM emphasises reforming public governance by re-strategizing public spending, with managerial principles, benchmarking and accountability, market solutions and increased privatisation (Ball, 2003; Gunter, Grimaldi, Hall, & Serpieri, 2016; Jónsson & Pálsson, 2007; Kristinsson, 2006; Ragnarsdóttir, 2018). In education policy these trends have included discourses of efficiency, international competitiveness, marketisation and decentralisation (Antikainen, 2006; Dovemark et al., 2018; Lundahl, 2002).

In the 1990s and early 2000s different ministerial committees were appointed to assess how the time of the academic programs could be reduced without reducing the content of the programs (Ministry of Education, 1994, 2003, 2004). Reducing the time of academic programs was intensely debated in the congressional treatment of the legislative bill that became the Upper Secondary Education Act in 2008 (Parliamentary Discussion 107/135; Upper Secondary Education Act No. 92/2008). Another contested issue was that the bill transferred too much power to the Minister of Education, enabling him or her to make large and impactful unilateral changes to the education system (Parliament Document No. 1061/2007–2008). In 2014 the reform was indeed implemented unilaterally by the Minister of Education, Science and Culture with a government directive (Ministry of Education, Science & Culture, 2014a). The main arguments for the reform were laid out in a White Paper issued that same year: to reduce dropout rates and increase the number of students completing upper secondary education on time (Ministry of Education, Science & Culture, 2014b). By doing this the efficiency of the education system could be improved and it could at the same time be made more comparable to the education systems of other European countries (Ministry of Education, Science & Culture, 2014b). NPM policy trends are a discernible part of the reform: low completion rates and student drop-out in upper secondary education are viewed as a technical problem that can be solved with managerial principles, the high drop-out rates giving rise to a sense of urgency to the matter of implementing the reform (Jónasson & Óskarsdóttir, 2016). Additionally, the White Paper emphasises that the Icelandic educational system should be internationally comparative and competitive, and strongly links the purpose of education to securing a foundation for the economy and industry. Pedagogic and educational arguments however do not seem to be considered in the White Paper (Ministry of Education, Science & Culture, 2014b).

The enactment of the reform was neither centrally organised nor monitored by education authorities. It was carried out within individual upper secondary schools, as they had the freedom to decide, within the framework of the National Curriculum

Guide (Ministry of Education, Science & Culture, 2012), how the time of the academic programs was reduced, what was removed, and what remained in the curriculum. The impact of the reform on the content of academic studies in upper secondary education is largely unknown. Since the academic programs prepare students for, and give access to, higher education (Higher Education Act No. 63/2006; Upper Secondary Education Act No. 92/2008) it can be argued that after the reform's enactment, there has been considerable uncertainty about students' preparation and in turn opportunities for continued academic studies in higher education.

3. Theoretical background

In this paper a broad view is taken on policy. It is seen as text, which stipulates governmental intentions and rhetoric (policy implementation), as a process, referring to what takes place when the policy is carried out (policy enactment) and its consequences, which depend on the context into which it is enacted (Apple, 2018; Ball, 1993; Ball, Maguire, & Braun, 2011; Young & Diem, 2016). Policy enters an environment of complex social relations, a myriad of different, even contrasting policies, and organisational hierarchies in which power to affect its enactment is not equally distributed (Ball, 1993; 1994; Braun, Ball, Maguire, & Hoskins, 2011; Levinson, Sutton, & Winstead, 2009). Therefore, the relationships between policy intentions, interpretation, and implications are complex (Ball, 1993; Diem et al., 2014; Taylor, 1997). In the paper the focus is on exploring the unintended consequences of the reform, that reduced the time of the upper secondary academic programs, within higher education, in terms of changes in students' preparations for university studies. Research indicates that higher education has a controlling influence on the upper secondary curriculum (Jónasson, 2016; Ragnarsdóttir, 2023; Ragnarsdóttir & Jónasson, 2020) although little is known about the mutual influence of upper secondary education on higher education. The academic study programs of upper secondary education prepare students for and, in general, provide access to higher education. Drastic organisational changes to the academic programs (such as reducing their time by approximately 25%) could be expected to reverberate through the education system and have unintended implications in higher education. The consequences of the reform's enactment in upper secondary education are unknown, in terms of which curricular subjects were removed and which held their place in the academic curriculum. The approach to education policy research taken in the paper is that power is not equally distributed between policy actors and social structures when the policy is enacted. It is therefore assumed in the framing of the study that the consequences of the reform's enactment may vary depending on the curricular subject in question. Some subjects are more likely to have been reduced or cut from the curriculum while others are more likely to have held their place. For this reason, we interviewed university staff from all the five different schools of the University of Iceland, to gain insight into whether they perceived any consequences caused by the reform's enactment and if the consequences might vary depending on the academic subjects.

When analysing the interviews taken in the study, theoretical perspectives on power relations within the curriculum and subject hierarchies were consulted. Bernstein's theories on pedagogic discourse provided tools for exploring the positions of power

different subjects have within the curriculum. Bernstein distinguished between horizontally and vertically structured knowledge; horizontally structured knowledge being context dependant and specific, typically every-day, practical knowledge, and vertically structured knowledge, which is abstract, typically educational, disciplinary knowledge (Bernstein, 1999; Martin, 2011; Wheelahan, 2010). Within vertical discourse Bernstein made a second distinction between hierarchically and horizontally structured discourses, depending on how educational knowledge and student understanding being developed over time (Bernstein, 1999; Martin, 2011; Martin, Maton, & Matruglio, 2010). Natural sciences are generally characterised as having a hierarchical structure, as students' understanding develops cumulatively over time, whereas social sciences, humanities, and education science are generally characterised as having a horizontal structure with segmentally organised knowledge (Bernstein, 1999; Martin, Maton, & Matruglio, 2010; Maton, 2009). Educational knowledge within academic subjects is however rarely organised purely into one or the other discursive forms, hierarchical or horizontal (Martin, 2011; Martin, Maton, & Matruglio, 2010). Figure 1 shows how academic subjects are categorised as having a hierarchical or horizontal structure along a continuum (Martin, 2011; Martin, Maton, & Matruglio, 2010).

According to Bernstein, power manifests in the classification of different categories, for example, the classification of knowledge into different academic subjects (Bernstein, 2000). The power relations of academic subjects are made visible by the boundaries between them and strongly classified subjects, usually pertaining to hierarchically structured knowledge, are afforded more power and higher status (Bernstein, 1971, 2003). The more abstract knowledge is, the more likely it is to be strongly classified and "more vertical", meaning it is not common sense, everyday knowledge, but produced and distributed at the university level and in turn considered more valuable.

Bernstein found that the notion of some knowledge being more intrinsically valuable than others is usually embedded in a curriculum (Bernstein, 1971, 2000), giving different subjects different statuses and power, also referred to as subject hierarchies (Bleazby, 2015). The ranking of different subjects' status in the hierarchy has been linked to their epistemological position: more abstract subjects generally have a higher status and, conversely, more applied or physical subjects have a lower status (Bernstein,

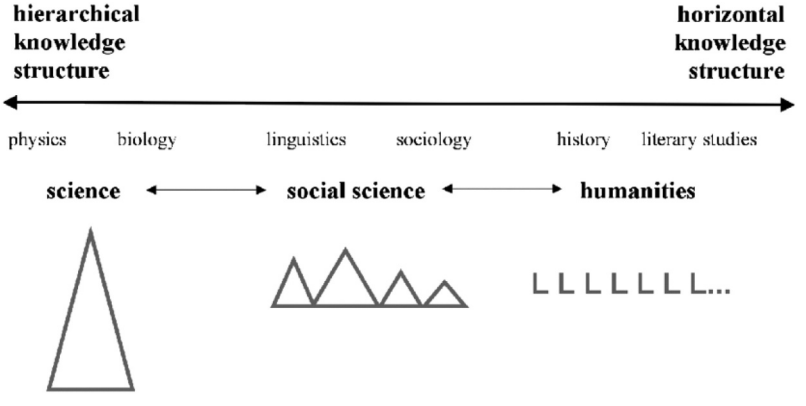

Figure 1. Vertical discourse as complementarities along a continuum (Martin, 2011)

1999; Bleazby, 2015). The traditional subject hierarchy can be seen for example in the fact that different amounts of time are accorded to different subjects, some subjects are compulsory while others are optional (Bernstein, 1971). Usually, "hardcore" subjects like mathematics, physics, and natural sciences are placed at the top of the hierarchy and more physical or vocational subjects are placed at the bottom (Bleazby, 2015). Research indicates that higher education contributes to the hierarchy of subjects, both through the academic disciplinarity and entrance requirements into higher education (Bjarnadóttir, 2019; Deng, 2012; Ragnarsdóttir & Jónasson 2020). Additionally, studies show that some curricular subjects are assumed to reflect greater economic value than others, especially subjects that are thought to drive economic growth, like mathematics and other natural sciences (Ball, ; Ward, 2012). Other local factors influence subject hierarchies. Specific academic subjects have a very strong tradition within the Icelandic upper secondary academic programs (Harðarson, 2011; Ragnarsdóttir, 2018), and in the Icelandic national curriculum for upper secondary education only three academic subjects are mandatory, Icelandic, English, and mathematics. As a result, these subjects are inevitably afforded higher status (Eiríksdóttir, Ragnarsdóttir & Jónasson, 2018; Ministry of Education, Science & Culture, 2012; Ragnarsdóttir & Jónasson, 2020). This emphasis on specific academic subjects is mirrored in the entrance requirements into Icelandic higher education (Ragnarsdóttir, 2023), which mostly emphasise the three core subjects of upper secondary education.

4. Method

Data collection consisted of 16 semi-structured interviews conducted in the winter of 2019–2020. Each interview was around 60–90 minutes in length, recorded and later transcribed verbatim to provide detailed information for analysing (Braun & Clarke, 2013). The participants were asked to discuss the policy reform, its consequences in terms of students' preparation for study at the University of Iceland, and any measures taken to adapt to changes in students' preparedness for university studies. An interview guide was designed before the interviews took place and developed as the interviews progressed (Braun & Clarke, 2013; Kvale & Brinkmann, 2015).

The 16 participants in the study were all part of the academic staff at the University of Iceland. The university was selected as a research site as it is by far the largest university in Iceland, representing two-thirds of the Icelandic higher education system (Ministry of Education, Science & Culture, 2015a). Stratified random sampling (Braun & Clarke, 2013) was used to select participants to ensure range and variety in terms of the role within the five different schools of the University of Iceland, and gender. Efforts were made to achieve a diverse sample within the confines of the study, including participants from different faculties within each school of the university. In two instances, snowball sampling (Braun & Clarke, 2013) was used when participants referred to other staff members from their school or faculty that they believed had more insight into the research topic. Efforts were made to secure the anonymity of participants and they were given pseudonyms (see Table 1). The abbreviation of the different schools of the university will be used in the findings to differentiate between the participants and in which schools they teach.

Table 1. Overview of participants.

School of Humanities (Humanities)	School of Social Sciences (SocialSci.)	School of Health Sciences (HealthSci.)	School of Engineering and Natural Sciences (NaturalSci.)	School of Education (Edu.Sci.)
Alma	Bára	Egill	Helena	Gísli
Anna	Bjarni	Embla	Heimir	Gréta
Ari	Björn	Erla	Helgi	Gunnar
			Hugi	

The interviews were analysed using an inductive thematic analysis procedure following reflexive thematic analysis; a cyclical process involved in reading and re-reading the transcribed interviews noting down interesting points which were then developed into codes for identifying patterned meaning across the data set (Braun & Clarke, 2006, 2013, 2021). The focus was on semantic coding, identifying, and summarising the content of the data (Braun & Clarke, 2006, 2013). Similar codes and excerpts from the interviews were gathered and organised into patterns. The patterns were developed into partly data-driven themes that linked back to the overall research questions on the consequences of the reform in higher education (Braun & Clarke, 2006, 2013, 2019; Terry, Hayfield, Clarke, & Braun, 2017) and theory-driven themes, using Bernstein's theory of pedagogic discourse (1971, 2003). The distinction between horizontal and hierarchical structures of educational knowledge was used for describing and comparing how participants articulated the consequences of the reform within their faculties and their capabilities to adapt to these consequences. In categorising the participants' subjects as having either a hierarchical or horizontal structure, the continuum portrayed in Figure 1 was used as a guideline. It must be noted that linguistics was categorised as having a hierarchical structure even though linguistics pertain to the School of Humanity at the University of Iceland and humanities are generally categorised as having a horizontal knowledge structure.

The main limitations of the study have to do with analysing the data. It is difficult to isolate the consequences brought about by the reform's enactment in upper secondary education from other influencing factors. While the reform was being enacted, other changes to the upper secondary education level also took place. For example, substantial changes were made to the upper secondary curriculum and the number and diversity of students has increased. Simultaneously, the higher education level has expanded, and with increased enrolment of students comes increased diversity of the higher education student body in general. Also, the participants of the study could only describe their own perceptions and assessment of students' preparation. For the most part none of them had specific knowledge of the upper secondary academic curriculum nor did they have a teaching experience from the school level.

5. Findings and discussion

The three themes that were generated from the data will be presented and discussed simultaneously in the following sections.

5.1. *Every level must play its part – the interconnectedness of upper secondary and higher education*

Indications of the interconnectedness and reciprocity of upper secondary and higher education were threaded through all the interviews. Participants emphasised the importance of each school level fulfilling its specific role in the system. For higher education to be able to fulfil its role of providing advanced education and specialisation, upper secondary education must prepare students accordingly. Most participants felt this had not been given adequate attention when the reform was implemented.

Some participants felt that university teachers should have been consulted when the reform was implemented and most of them believed that teachers had not been given a real chance to influence the negotiation and implementation of the reform. Gunnar (Edu.Sci.) for example stated: "if this was supposed to be a real system change, then I think university teachers should have been consulted, as well as upper secondary and primary school teachers". Other participants felt that teachers had been consulted but that their participation had been superfluous and only for the sake of appearances. This is evident in Anna's (Humanities) account: "I attended many meetings in the Ministry of Education, Science, & Culture when this was discussed and … all arguments were ignored". Gísli (Edu.Sci.) felt the same way, i.e. that even though teachers contributed to the negotiation of the reform their comments and inputs were ignored: "Everybody was against it and then it was just hammered through". Interestingly, despite participants' accounts of being unable to affect the reform, a recent study shows that upper secondary school leaders believe the university greatly influences policymaking in upper secondary education (Ragnarsdóttir, 2018; Ragnarsdóttir & Jónasson, 2020).

Many participants discussed that to ensure the ability of upper secondary education to properly prepare students for higher education, a part of its curriculum should have been moved to the primary school level. Interestingly, none of the participants discussed the reorganisation of the university level in this context. Some participants mentioned that the reform had originally been presented as a complete system change that had not been realised. Ari (Humanities) believed that "a year was simply cut away from upper secondary education". Alma (Humanities) felt very strongly about this: "the upper secondary schools were told that certain study material would be moved to the primary school level and that they could organise their programs in accordance with that, but then the primary school level just shrugged, and nothing changed there". Helgi (NaturalSci.) agreed: "it was also discussed that some of the curricula would be moved from upper secondary education to the primary school level, but I can't see that happening, unfortunately". In this context, it must be noted that no information is available on whether a transfer of curricula was at any point a part of the reform. Upper secondary school directors seem to have received information that a part of the curriculum had already been transferred to compulsory education (Commercial College of Iceland, 2018; Parliamentary Document No. 320/2007–2008; Ragnarsdóttir, 2018). Public documents however indicate that this transfer had not taken place (Ministry of Education, Science & Culture, 2015b).

Due to the lack of consideration for the connection and reciprocity of different school levels, most participants had reservations about the educational benefits of the

reform. Furthermore, many participants discussed that the reform was supported by economic arguments of an efficient school system and lacked any educational or pedagogic vision. They believed the reform was an austerity measure rather than being intended to improve education. Helena (NaturalSci.) observed: "I think that this decision was taken in the Ministry of Finance and Economic Affairs more than … in the Ministry of Education, Science and Culture". Hugi (NaturalSci.) pointed this out as well: "I thought this was mostly just to save money, but it was called something else", as did Embla (HealthSci.): "I think this was because of pressure from the job sector". Participants' accounts seem to have merit, considering the economic arguments for reducing the length of academic programs in the White Paper on education reform (Ministry of Education, Science & Culture, 2014b). Participants accounts are consistent with Nordic research that indicate that education policy increasingly emphasises the effective use of public funds and efficiency in education (Antikainen, 2010; Beach, 2018; Dovemark et al., 2018).

5.2. *What constitutes preparation for higher education? – Different manifestations of the reform's consequences and contrasting ideas about the upper secondary academic curriculum*

Participants' discussions reflected some contrasting ideas about the upper secondary curriculum. Most participants believed that it should provide students with strong foundational knowledge in specific subjects while at the same time offering a broad and balanced upper secondary education. Participants across all the schools of the University worried that the reform's enactment had reduced the diversity in the academic studies offered in upper secondary education because students now had fewer chances to acquaint themselves with diverse academic subjects. In this way, the reform's enactment had a homogenising effect on the academic curriculum in upper secondary education. Heimir (NaturalSci.) believed that: "people increasingly have less room for anything outside of the core subjects". Research on decentralised curriculum policy indicates that even though curriculum autonomy is afforded to schools this does not necessarily mean schools have room to fully utilise it, because of the influence of different factors (Nieveen & Kuiper, 2012; Ragnarsdóttir, 2018). Participants' accounts indicate that in the case of the Icelandic National Curriculum, the reform that reduced the time of the academic programs has counteracted its aims of increased diversity in the academic curriculum in upper secondary education.

Participants from subjects that we categorised as having a horizontal structure associated falling student enrolment in their faculties with the reform's enactment as students were no longer introduced to their subjects in upper secondary education. Björn (SocialSci.) stated: "Last fall the number of new students was halved … almost all the factors were the same but suddenly the number of students enrolled dropped … therefore, we think that reducing the length of the academic programs might be a cause". Björn was referring to the fact that very few upper secondary schools offer courses in his subject after the reform's enactment. Björn explained: "we are a little worried that enrolment in our faculty will continue to decrease because students just won't know that this subject exists". Many believed that after the reform's enactment, an over-emphasis had been placed on the core subjects of the upper secondary

curriculum, mathematics in particular. Participants felt the reform had negatively affected "less valuable" academic subjects, especially humanities and social sciences, while subjects that were believed to have "higher value", like mathematics and other natural sciences, had kept their status. Alma (Humanities) believed that because the natural sciences dominate the entrance requirements in higher education students increasingly "enrol in upper secondary education with the idea that everybody has to study as much mathematics and natural sciences as possible so as not to restrict their possibilities for higher education".

Participants' accounts reflect the traditional subject hierarchy; the notion of academic subjects having different values as well as holding different statuses and power within the academic discourse, with mathematics typically having the highest status and holding the most power within a curriculum (Bernstein, 1971; Bjarnadóttir, 2018, 2019; Bjarnadóttir, Öhrn, & Johansson, 2019; Bleazby, 2015). Participants' accounts highlight the power and status the National Curriculum affords mathematics by defining it as a core subject (Ministry of Education, Science & Culture, 2012; Ragnarsdóttir, 2018). The accounts also accentuate how higher education contributes to its power and status within the academic curriculum by stipulating a minimum number of credits in mathematics in the entrance requirements of the University of Iceland (Ragnarsdóttir & Jónasson, 2020). It fits well with Bernstein's theory on pedagogic discourse that mathematics would hold considerable power in the curriculum as it is a strongly classified subject with a strict hierarchical structure (Bernstein, 1999). Further research on the reform's enactment is needed with regard to which academic subjects have kept their place and status in the curriculum and which have not.

Even though many participants felt that mathematics had the highest status and most power of subjects within the upper secondary academic curriculum, participants that taught subjects that required strong foundational knowledge in mathematics acquired in upper secondary education believed that mathematics had been reduced substantially in the upper secondary academic curriculum when the reform was enacted, at least in some upper secondary schools. Helgi (NaturalSci.) felt that: "now there isn't enough time to teach them mathematics properly" in upper secondary education. He continued to say: " … there are no elective subjects … and students don't have the chance to take advanced courses in natural sciences. They have so little time that they only study the minimum and barely that in my opinion". Helgi and Helena (NaturalSci.) felt that additionally there was a great difference between the preparation of students depending on which upper secondary school they had graduated because of the different ways in which individual schools had enacted the reform. In some schools, significant cuts had been made in mathematics and others, almost no cuts had been made. This can be seen in Helena's words: "it's terrible the difference between what [students] have been taught". Helgi and Helena mentioned several factors that contributed to these between-school differences. They included the location and size as well as human resources in different upper secondary schools. Helena believed that "the level of education of teachers within upper secondary schools is very different" and Helgi felt that "rural schools are in a much more vulnerable position". They felt strongly about this difference between the academic programs of different upper secondary schools and felt that they had effectively lost their value. This is evident in Helgi's words: "the matriculation exam nowadays is just a meaningless document". Helena felt that "this is a kind of a betrayal to students". She continued: "[they] have this dream to study [her

subject] … they graduate from natural sciences study programs, thinking that is a good preparation for university studies, but unfortunately it turns out, it is not".

Even though there are indications that mathematics has a stronger status within the upper secondary curriculum than other academic subjects, Helgi and Helena's accounts suggest that it was also reduced when the reform was enacted. Their accounts also suggest that the reform's enactment has enhanced the difference between academic programs in individual upper secondary schools. This is in line with findings from research on school autonomy policy (Altrichter, Heinrich, & Soukup-Altrichter, 2014). Helgi and Helena's accounts highlight the need to further explore the interplay of the reform with the policy of decentralised curriculum making and the consequences for between-school differences in academic programs in individual upper secondary schools.

5.3. *Debating the role of higher education – Different measures available in adapting to the reform's consequences*

As well as debating the role of upper secondary education, participants reflected on the role of higher education and if it would have to assume tasks that had belonged to upper secondary education before the reform's enactment. Ari (Humanities) for instance wondered whether the material cut from upper secondary education would in effect be added to the university level: "if upper secondary education is not enough, if it is too limited or too narrow then I do not know how the university should react if it has to take the fourth year of upper secondary education over". While many participants felt that there was a need to take some measures to adapt to the consequences of the reform, most were hesitant about assuming tasks that before the reform's enactment had belonged to upper secondary education.

Participants from horizontally structured subjects felt that the task of introducing students to their subjects should continue to belong to upper secondary education as a part of getting students acquainted with diverse subjects and offering them a broad education. In this context, Ari (Humanities) noted: "the upper secondary school level should give a general and broad education … the University is for specialisation in certain disciplines". Some participants felt, however, that this role of providing students opportunities for exploring different academic subjects had already moved to higher education. Björn (SocialSci.) noted that students now "enrol in our faculty just to try it out and see if they like it". Others talked about specific measures already taken to combat the decreasing numbers of students, including sending university students to upper secondary schools to promote their subject. Bjarni was one: "we now send a group of students to the upper secondary schools to promote [the subject] and to increase visibility". Bjarni continued: "then they have time to realise the possibility of studying here". According to Bjarni this promotion "is often what causes students to come and study" at his faculty. Studies on the relationship between students getting introduced to a subject in upper secondary education and enrolling in a subject in higher education were not found but participant's accounts suggest that this relationship is important. It is of interest to further study the possible connection between the implementation of the reform and changes in the admission numbers in different schools of the university.

Many participants from hierarchically structured subjects felt that after the reform's enactment, a considerable part of their students no longer had acquired the necessary preparation from upper secondary education for higher education. These participants appeared to find themselves in a dilemma. In general, participants felt passionately that the University should continue to be open for all students wanting to study there. However, they felt that they had to take some measures to adapt to students having insufficient preparation for studying at their faculties while not wanting to devalue their programs. Most felt that the lesser option of two evils was to introduce stricter entrance requirements and thereby ensure students' sufficient preparation for their studies, rather than devaluing their programs by integrating study material previously taught in upper secondary education into their syllabus. Participants that taught natural sciences, spoke of several measures taken to avoid having to impose stricter entrance requirements. Helgi's (NaturalSci.) faculty had received funding for hiring teacher assistants and increased course assessment. At Embla's (HealthSci.) faculty certain changes had recently been made to adapt to student's lack of preparation by requiring them to have finished "all the courses from the first year to be able to move on to the second year of studies". Despite these efforts participants believed that they would inevitably have to impose entrance examinations to avoid having to devalue their programs because of insufficient student preparation. Most participants emphasised that a solution for students that failed entrance examinations would simultaneously have to be offered. Helgi (NaturalSci.) discussed this extensively: "One idea is to place students [who fail the entrance exams] in an introductory course, which would cover material that we feel should be covered at the upper secondary level but hasn't been taught". He continued: "I don't think there is anything wrong with putting them in preparatory courses that would take at least one semester or two, if they really want to be in this program". His reservations had to do with the university offering preparatory courses, he felt doubtful if it "should be the role of universities to do this".

Even though the hierarchically structured subjects are generally ranked highly in the hierarchy of subjects and thus attributed more power than others (Bleazby, 2015), not all participants felt they could react to these changes. Their capabilities depended (seemingly completely) on the number of students enrolled in their faculties. The University is run with formula funding and departments receive funding based on the number of students enrolled (Higher Education Act No. 63/2006). Anna and Alma (Humanities), who taught linguistics, felt conflicted in how to react to students no longer having the necessary preparation. Alma explained that: "different faculties are of course in different positions to [introduce entrance exams]". She continued to say that "we have a very small number of students now" meaning that they were not able to introduce exams because it might discourage students from applying to her faculty. Anna felt that she had no good options to choose from in adapting to the consequences of the reform. Her faculty could not afford to possibly deter students from applying by introducing stricter entrance requirements. To avoid lowering the standards in her faculty they would have to add preparatory courses to their program, "but that means additional funding from the University", which she did not believe that her faculty would receive because of how few students were enrolled compared to other faculties. Formula funding has been increasingly used in the management of educational institutions in the last decades. It is strongly linked to NPM policy trends and meant to secure the effective use and distribution of public funds (Antikainen, 2010; Gunter, Grimaldi,

Hall, & Serpieri, 2016; Ragnarsdóttir, 2018. Participants accounts indicate that the formula funding influence if and how different faculties within the university are able to take measures that they deem necessary, to a crisis brought about (at least in part) by the reform's enactment in upper secondary education.

6. Conclusions

Our findings strongly suggest that the connection between upper secondary and higher education is reciprocal, and that upper secondary education seems to hold some control over higher education in a similar way in which higher education does for upper secondary education (Jónasson, 2016; Levin & Londhe, 2012; Ragnarsdóttir, 2018; Ragnarsdóttir & Jónasson, 2020). Threaded throughout the interviews were indications that the university was having to adapt to consequences brought about by the reform's enactment, suggesting that the upper secondary education reform has had consequences within higher education.

The consequences of the reform as described by participants seemed to vary and depend on the knowledge structure of different academic subjects in higher education, using Bernstein's theories on pedagogic discourse (Bernstein, 1971, 1999, 2000). Participants from subjects that have a hierarchical knowledge structure described having to face a difficult situation in that a large number of their students did not have adequate preparation in their subject from upper secondary education. The lack of preparation they attributed at least in part to the reform's enactment, which had resulted in students not having enough time to study advanced material in their subjects. In this context they discussed increased differences between individual upper secondary schools. Participants from subjects with a more horizontal structure did however not discuss inadequate preparation of students but described a falling student enrolment in their faculties which they believed might have to do with their subject having been reduced from the academic curriculum during the reform's enactment in upper secondary education. These findings give rise to questions about whether the reform has affected both the depth and diversity of the academic curriculum within upper secondary education which needs to be examined further.

Participants described considerable tensions in adapting to the consequences brought about by the reform's enactment. Overall, participants resisted taking measures like imposing entrance examinations, wanting the University to continue being open to all students having graduated from academic programs in upper secondary education. Some participants from hierarchically structured subjects, however, felt they were forced to take such measures to avoid devaluing their programs. These participants seemed to have different measures available to them, depending, at least in part, on their subjects' place in the curriculum (Bernstein, 2000; Bleazby, 2015). Another factor seems to be the university's formula funding. Participants from faculties were there are small numbers of students (regardless of the subject's position in the subject hierarchy) do not receive as much funding to take measures as faculties with larger number of students, and they do not want to discourage students to apply to their faculties by introducing strict entrance requirements (and reduce their number of students even further).

The reform that reduced the time of the academic programs was implemented a few years after a policy of enhanced school autonomy and decentralised

curriculum-making was implemented, which aimed to increase diversity in upper secondary education. These policies were not part of the same policy initiative. In this study there are indications that the diversity in the academic curriculum in upper secondary education has been reduced with the reform's enactment. Therefore, further exploration is needed on the impact of the reform, on the content of the academic programs and its interplay with the curriculum policy (Ministry of Education, Science & Culture, 2012), which aimed for increasing the diversity of the available studies in upper secondary education. Lessons from Iceland may provide valuable information and insight into the interplay and possible contradictions of policies aiming for increased efficiency in education systems and decentralised curriculum-making.

Disclosure statement

No potential conflict of interest was reported by the authors.

Notes on contributors

María Jónasdóttir is a PhD candidate at the University of Iceland, School of Education. She completed a BA and master's degree in law from the University of Iceland in 2009 and 2011, respectively. Her research interests include curriculum studies and critical approaches to education policy and reform.

Guðrún Ragnarsdóttir is an associate professor in the Faculty of Education and Pedagogy, School of Education, University of Iceland. Guðrún holds a BSc degree in biomedical science and two diplomas, one in education and another in public administration. She has also completed a master's degree in public health and a PhD in educational science from the University of Iceland in 2018. Guðrún has worked as a primary school teacher, upper secondary teacher and a school leader, as well as having been employed as a teacher trainer for the Council of Europe. Her research interests include pedagogy, educational change and policy, professional development and school leadership. Recently her research focus has been on the impact of COVID-19 on upper secondary education.

Elsa Eiríksdóttir is an associate professor at the University of Iceland, School of Education. She completed a BA degree in psychology from the University of Iceland in 1999, and a master's degree and a PhD in engineering psychology from Georgia Institute of Technology in Atlanta in 2007 and in 2011, respectively. Her research interests include transfer of learning/training, skills acquisition, upper secondary education, and vocational education and training.

ORCID

María Jónasdóttir http://orcid.org/0000-0001-9166-6307

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